

### **REMARKS**

Claims 21 and 29 are objected to because of informalities. Claims 1-4, 9-12 and 14-19 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent Application Publication No. 2002/0154079 to *Shiota et al.* (hereinafter "*Shiota*"). Claims 5-6, 21-27 and 30-36 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Shiota* in view of U.S. Patent No. 5,745,207, issued to *Asada et al.* (hereinafter "*Asada*"). Claims 7 and 8 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Shiota* in view of U.S. Patent No. 6,201,273, issued to *Wang et al.* (hereinafter "*Wang*"). Claim 13 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Shiota* in view of U.S. Patent No. 6,806,930, issued to *Moia et al.* (hereinafter "*Moia*"). Claim 20 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Shiota* in view of U.S. Patent Application Publication No. 2002/0044246 to *Moon et al.* (hereinafter "*Moon*"). Claim 28 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Shiota* and *Asada* in view of *Moia*. Claim 29 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Shiota* and *Asada* in view of *Wang*. Claim 37 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Shiota* and *Asada* in view of *Moon*.

In this Response, claims 1, 3-6, 11-12, 19-21, 25, 27, 29-30, 32-33 and 36-37 are amended. No claim is canceled. Accordingly, claims 1-37 are pending in the present application. Applicants respectfully request reconsideration of the application in view of the above amendments and remarks made herein.

#### **I. Claim Objections**

Claims 21 and 29 are amended to correct the informalities noted by the Examiner. Withdrawal of the instant claim objections is respectfully requested.

#### **II. Rejections Under 35 U.S.C. § 102**

Claims 1-4, 9-12 and 14-19 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by *Shiota*, for the reasons set forth on pages 2-6 of the Office Action. Applicants note that claim 1 is amended in this Response. Applicants

respectfully submit that *Shiota* does not anticipate this claim because *Shiota* does not disclose "a first pixel electrode formed in a pixel area defined by intersections of the gate line and the data line, said first pixel electrode formed substantially parallel to the gate line," as in claim 1, as amended.

In regard to *Shiota*, it discloses a pixel electrode 31 made of pixel electrode portions 31a disposed parallel to one another, and electrode linking portions 31b to 31d linking the pixel electrode portions 31a (paragraph 136). *Shiota* discloses the portions 31b to 31d function as storage capacity electrodes, wherein portions 31b and 31d are provided on the gate line Xm-1 via the insulating layer 5, and portion 31c is provided on the opposing electrode wire 12b via the insulating layer 5 (paragraph 136, FIG. 6). In *Shiota* (FIG. 6), the pixel electrode 31, including pixel electrode portions 31a, is disposed parallel to the data lines Yn-1 and Yn and perpendicular to the gate lines Xm-1 and Xm. Therefore, in *Shiota*, the pixel electrode 31 is disposed parallel to the data lines and perpendicular to the gate lines.

Applicants respectfully submit that a pixel electrode 31 made of pixel electrode portions 31a and electrode linking portions 31b to 31d, said pixel electrode 31 disposed *perpendicular to the gate lines* does not teach "a first pixel electrode formed in a pixel area defined by intersections of the gate line and the data line, said first pixel electrode formed substantially *parallel to the gate line*," as in claim 1, as amended (emphasis added). Therefore, for at least this reason, *Shiota* does not anticipate claim 1, as amended. Applicants respectfully submit that inasmuch as claims 2-4, 9-12 and 14-19 are dependent on claim 1, and claim 1 is patentable over *Shiota*, claims 2-4, 9-12 and 14-19 are patentable as dependent on a patentable independent claim. Withdrawal of the rejections under 35 U.S.C. § 102(b) is respectfully requested.

### **III. Rejections Under 35 U.S.C. § 103**

Claims 5-6, 21-27 and 30-36 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Shiota* in view of *Asada*, for the reasons set forth on pages 7-10 of the Office Action. Applicants incorporate by reference their arguments made above in connection with the rejection of claim 1 under 35 U.S.C. § 102(b). In regard to

*Asada*, Applicants respectfully submit that it neither teaches nor suggests "a first pixel electrode formed in a pixel area defined by intersections of the gate line and the data line, said first pixel electrode formed substantially parallel to the gate line," as in claim 1, as amended. Therefore, the deficiencies of *Shiota* are not cured. Applicants submit that inasmuch as claims 5 and 6 are dependent on claim 1, and claim 1 is patentable and non-obvious over the combination of over *Shiota* and *Asada*, claims 5 and 6 are patentable as dependent on a patentable independent claim. Accordingly, withdrawal of the instant rejections is respectfully requested.

With respect to claim 21, as amended, Applicants submit that this claim is patentable and non-obvious over the combination of *Shiota* and *Asada* because the cited references, alone or in combination, fail to teach or suggest "a first data line disposed at a first angle with respect to a perpendicular direction of the first gate line, said first data line intersecting the first gate line; a second data line disposed at a second angle with respect to a perpendicular direction of the first gate line, said second data line intersecting the first gate line," as in claim 21, as amended. Applicants note that the Examiner admits that *Shiota* fails to disclose that the *third and fourth signal lines* [amended as: "first and second data lines"] bend at an angle with respect to the *first signal line* [amended as: "first gate line"]. Office Action mailed June 27, 2005, Page 8 (emphasis added).

In regard to *Asada*, it discloses in an active matrix liquid crystal display, the signal wirings 3 are parallel to the common electrodes 2 and the pixel electrodes 4 and formed in a substantially herringbone shape. *Asada* discloses by such a configuration, a ratio of opening area, which is defined by a ratio of total area of display regions against total area of one pixel, can be increased. Therefore, *Asada* discloses common electrodes 2 and pixel electrodes 4 are respectively formed parallel to each other and have substantially herringbone shapes. Nowhere does *Asada* teach or suggest "a first data line disposed at a first angle with respect to a perpendicular direction of the first gate line, said first data line intersecting the first gate line; a second data line disposed at a second angle with respect to a perpendicular direction of the first gate line, said second data line intersecting the first gate line," as in claim 21, as amended. For the

above-stated reasons, Applicants submit that the Examiner's reliance on the cited reference, specifically, col. 6, lines 66-67; col. 7, lines 1-5; elements 3 and 1 of Figure 3, is misplaced. Therefore, for at least these reasons, claim 21 is patentable and non-obvious over the combination of *Shiota* and *Asada*.

Furthermore, with respect to claim 21, Applicants respectfully assert that the Examiner has failed to adequately set forth an obviousness rejection under 35 U.S.C. § 103(a). Applicants respectfully submit that there is no teaching or motivation to combine the prior art teachings in the particular manner claimed. Applicants note that the Federal Circuit states that a person of ordinary skill in the art must not only have had some motivation to combine the prior art teachings, but some motivation to combine the prior art teachings in the particular manner claimed. See, e.g., *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000) ("Particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed." (emphasis added)); *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998) ("In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited art references for combination in the manner claimed." (emphasis added)). *Asada* discloses common electrodes 2 and pixel electrodes 4 are respectively formed parallel to each other and have substantially herringbone shapes; by such a configuration, a ratio of opening area, which is defined by a ratio of total area of display regions against total area of one pixel, can be increased. *Shiota* discloses a pixel electrode 31 is made of pixel electrode portions 31a disposed parallel to one another, and electrode linking portions 31b to 31d linking the pixel electrode portions 31a (paragraph 136); the portions 31b to 31d function as storage capacity electrodes, wherein portions 31b and 31d are provided on the gate line Xm-1 via the insulating layer 5, and portion 31c is provided on the opposing electrode wire 12b via the insulating layer 5 (paragraph 136, FIG. 6). Moreover, in *Shiota* (FIG. 6), the pixel electrode 31 including pixel electrode portions 31a is disposed parallel to the data lines and perpendicular to the gate lines. Therefore, Applicants respectfully submit that a person of ordinary skill in the art, would

not select elements from the cited art references for combination in the manner claimed in claim 21, because, in *Asada*, common electrodes 2 and pixel electrodes 4 are formed parallel to each other and have substantially herringbone shapes, *whereas*, in *Shiota*, a pixel electrode is made of pixel electrode portions 31a disposed parallel to one another and electrode linking portions 31b to 31d linking the pixel electrode portions 31a, the pixel electrode 31 is disposed parallel to the data lines and perpendicular to the gate lines, and because the instant claim language of claim 21, as amended, reads: "a first gate line extending in a first direction; a second gate line disposed parallel to the first gate line; a first data line disposed at a first angle with respect to a perpendicular direction of the first gate line, said first data line intersecting the first gate line; a second data line disposed at a second angle with respect to a perpendicular direction of the first gate line, said second data line intersecting the first gate line."

Therefore, for at least the above reasons, claim 21 is patentable and non-obvious over the combination of *Shiota* and *Asada*. Moreover, Applicants submit that inasmuch as claims 22-27 and 30-36 are dependent on claim 21, and claim 21 is patentable and non-obvious over the cited references, claims 22-27 and 30-36 are patentable as dependent on a patentable independent claim.

Claims 7 and 8 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Shiota* in view of *Wang*, for the reasons set forth on pages 10-11 of the Office Action. In regard to *Wang*, Applicants submit that it neither teaches nor suggests "a first pixel electrode formed in a pixel area defined by intersections of the gate line and the data line, said first pixel electrode formed substantially parallel to the gate line," as in claim 1, as amended. Therefore, the deficiencies of *Shiota* are not cured. Applicants submit that inasmuch as claims 7 and 8 are dependent on claim 1, and claim 1 is patentable and non-obvious over the combination of *Shiota* and *Wang*, claims 7 and 8 are patentable as dependent on a patentable independent claim. Accordingly, withdrawal of the instant rejections is respectfully requested.

Claim 13 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Shiota* in view of *Moia*, for the reasons set forth on page 11 of the Office Action. Claim 20 stands rejected under 35 U.S.C. § 103(a) as being allegedly

unpatentable over *Shiota* in view of *Moon*, for the reasons set forth on page 12 of the Office Action. In regard to *Moia* and *Moon*, Applicants submit that neither of these references teaches or suggests "a first pixel electrode formed in a pixel area defined by intersections of the gate line and the data line, said first pixel electrode formed substantially parallel to the gate line," as in claim 1, as amended. Therefore, the deficiencies of *Shiota* are not cured. Applicants submit that inasmuch as claims 13 and 20 are dependent on claim 1, and claim 1 is patentable and non-obvious over the combination of the cited references, claims 13 and 20 are patentable as dependent on a patentable independent claim. Accordingly, withdrawal of the instant rejections is respectfully requested.

Claim 28 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Shiota* and *Asada* in view of *Moia*, for the reasons set forth on pages 12-13 of the Office Action. Claim 29 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Shiota* and *Asada* in view of *Wang*, for the reasons set forth on page 13 of the Office Action. Claim 37 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Shiota* and *Asada* in view of *Moon*, for the reasons set forth on pages 13-14 of the Office Action. In regard to *Moia*, *Moon* and *Wang*, Applicants submit that none of the cited references teach or suggest "a first gate line extending in a first direction; a second gate line disposed parallel to the first gate line; a first data line disposed at a first angle with respect to a perpendicular direction of the first gate line, said first data line intersecting the first gate line; a second data line disposed at a second angle with respect to a perpendicular direction of the first gate line, said second data line intersecting the first gate line," as claimed in claim 21. Therefore, the deficiencies of *Shiota* and *Asada* are not cured. Applicants respectfully submit that inasmuch as claims 28, 29 and 37 are dependent on claim 21, and claim 21 is patentable and non-obvious over the combination of the cited references, claims 28, 29 and 37 are patentable as dependent on a patentable independent claim. Withdrawal of the instant rejections is respectfully requested.

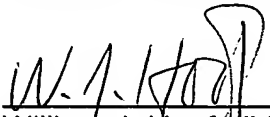
In view of the foregoing, the rejections under 35 U.S.C. § 103(a) should be withdrawn.

**CONCLUSION**

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance. Issuance of a Notice of Allowance is respectfully requested.

Respectfully submitted,

Dated: October 26, 2005

  
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